

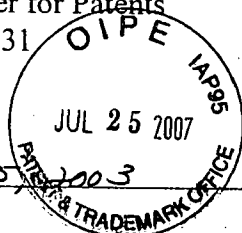
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PATENT
Attorney Docket No.: 015389-002611US
Client Reference No.: 018/063C

On February 25, 2003



TOWNSEND and TOWNSEND and CREW LLP

By: Maisie C. Livengood
Maisie C. Livengood

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Geron Corporation

Application No.: 09/432,503

Filed: November 2, 1999

For: HUMAN TELOMERASE
CATALYTIC SUBUNIT

Examiner: Peter P. Tung

Art Unit: 1652

SUPPLEMENTAL INFORMATION
DISCLOSURE STATEMENT UNDER 37
CFR §1.97 and §1.98

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

The references cited on attached form PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. With the exception of references AV, AW and AX, copies of which are enclosed, copies of the references can be found in U.S. Patent Application 08/912,951 filed August 14, 1997 (now U.S. Patent 6,475,789, issued November 5, 2002).

It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no

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Geron Corporation

Application No.: 09/432,503

Page 2

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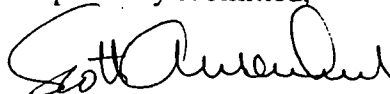
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representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

This IDS is being filed before the mailing date of the final Office Action or Notice of Allowance.

Please charge the IDS fee of \$180 to Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,



Scott L. Ausenhus

Reg. No. 42,271

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SLA:mcl

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Substitute for form 1449, PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 3 of 12

Complete if Known

Application Number	09/432,503
Filing Date	November 2, 1999
First Named Inventor	Cech, Thomas R., et. al.
Art Unit	1652
Examiner Name	Peter P. Tung
Attorney Docket Number	015389-002611US

U.S. PATENT DOCUMENTS					
Examiner	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
	AA	08/751,189	11-15-96	Harrington, et al.	
	AB	60/038,750	02-20-1997	Counter, et al.	
	AC	3,817,837	06-18-1974	Tanenholtz <i>et al.</i>	
	AD	3,850,752	11-26-1974	Schuurs <i>et al.</i>	
	AE	3,939,350	02-17-1076	Kronick <i>et al.</i>	
	AF	3,996,345	12-01-1976	Ullman <i>et al.</i>	
	AG	4,275,149	06-23-1081	Litman <i>et al.</i>	
	AH	4,277,437	07-07-1981	Maggio	
	AI	4,366,241	12-28-1982	Tom <i>et al.</i>	
	AJ	4,683,195	07-28-1987	Mullis <i>et al.</i>	
	AK	4,683,202	07-28-1987	Mullis	
	AL	4,816,567	03-28-1989	Cabilly <i>et al.</i>	
	AM	4,965,188	10-23-1990	Mullis <i>et al.</i>	
	AN	5,489,508	02-06-1996	West <i>et al.</i>	
	AO	5,583,016	12-10-1996	Villeponteau <i>et al.</i>	
	AP	5,747,317	05-05-1998	Cao	
	AQ	5,770,422	06-23-1998	Collins	
	AR	6,093,809	07-25-2000	Cech, et al.	
	AS	6,258,535 - B1	07-10-2001	Villeponteau <i>et al.</i>	
	AT	6,261,556 - B1	07-17-2001	Weinrich <i>et al.</i>	
	AU	6,261,836 - B1	07-17-2001	Cech <i>et al.</i>	
	AV	6,093,809	07-25-2000	Cech <i>et al.</i>	
	AW	6,166,178	12/26-2000	Cech <i>et al.</i>	
	AX	6,475,789 B1	11-05-2002	Cech <i>et al.</i>	

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁹
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)				
	AY	JP	09154575-A		06-17-97			
	AZ	PCT	WO 84/03564		09-13-84			
	BA	PCT	WO 95/13382		05-18-95			
	BB	PCT	WO 96/01835		01-25-96			
	BC	PCT	WO 96/12811		05-02-96			
	BD	PCT	WO 96/19580		06-27-96			
	BE	PCT	WO 96/40868		12-19-96			
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Application Number	09/432,503	
			Filing Date	November 2, 1999	
			First Named Inventor	Cech, Thomas R., et. al.	
			Art Unit	1652	
			Examiner Name	Peter P. Tung	
Sheet	4	of	12	Attorney Docket Number	015389-002611US

FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
	BF	PCT	WO 98/01542			01-15-98	
	BG	PCT	WO 98/01543			01-15-98	
	BH	PCT	WO 98/07838			03-05-98	
	BI	PCT	WO 98/08938			02-26-98	
	BJ	PCT	WO 98/21343			05-22-98	
	BK	PCT	WO 98/37181			08-27-98	
	BL	PCT	WO 98/45450			10-15-98	
	BM	PCT	WO 98/59040			12/30/98	
	BN	PCT	WO 99/01560			01/14/99	

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet 5 of 12**Complete if Known**

Application Number	09/432,503
Filing Date	November 2, 1999
First Named Inventor	Cech, Thomas R., et. al.
Art Unit	1652
Examiner Name	Peter P. Tung
Attorney Docket Number	015389-002611US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	BO	1994 Genome Issue of <i>Science</i> (265:1981f)	
	BP	Anderson and Young, "Quantitative Filter Hybridization" in <i>Nucleic Acid Hybridization</i> pp73-111 (1985)	
	BQ	Ausubel <i>et al.</i> ; (1989); Current Protocols in Molecular Biology; pp 5.1-5.11, 16.1-16.3 and 16.9-16.20; John Wiley & Sons, New York NY	
	BR	Autexier <i>et al.</i> , "Reconstitution of human telomerase activity and identification of a minimal functional region of the human telomerase RNA," (1996) <i>EMBO J</i> , 15:5928	
	BS	Auxexier and Greider, "Functional reconstitution of wild-type and mutant <i>Tetrahymena</i> telomerase," (1994) <i>Genes Develop.</i> , 8:563	
	BT	Berger and Kimmel, <i>Guide to Molecular Cloning Techniques</i> ; (1987); Meth. Enzymol.; vol. 152; pp 305-389; Academic Press; San Diego CA	
	BU	Biessman <i>et al.</i> , "Addition of Telomere-Associated HeT DNA Sequences "Heals" Broken Chromosome Ends in <i>Drosophila</i> ," (1990) <i>Cell</i> , 61:663	
	BV	Bitter <i>et al.</i> , "Expression and secretion vectors for yeast," Meth Enzymol., (1987) 153:516	
	BW	Blackburn and Chiou, "Non-nucleosomal packaging of a tandemly repeated DNA sequence at termini of extrachromosomal DNA coding for rRNA in <i>Tetrahymena</i> ," (1981) <i>Proc. Natl. Acad. Sci.</i> , 78:2263	
	BX	Blackburn and Gall, "A tandemly repeated sequence at the termini of the extrachromosomal ribosomal RNA genes in <i>Tetrahymena</i> ," (1978) <i>J. Mol. Biol.</i> , 120:33	
	BY	Blackburn, "Telomerases," (1992) <i>Ann. Rev. Biochem.</i> , 61:113	
		Bodnar <i>et al.</i> , "Extension of Life-Span by Introduction of Telomerase into Normal Human Cells," (1998) <i>Science</i> , 279:349	
		Bradford, "A Rapid and Sensitive method for the Quantitation of Microgram Quantities of Protein Utilizing the Principle of Protein-Dye Binding," (1976) <i>Anal. Biochem.</i> , 72:248	
		Braunstein <i>et al.</i> , "Transcriptional silencing in yeast is associated with reduced nucleosome acetylation," (1993) <i>Genes Develop.</i> , 7:592	

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Substitute for form 1449B/PTO		Complete if Known	
		Application Number	09/432,503
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Filing Date	November 2, 1999
		First Named Inventor	Cech, Thomas R., et. al.
		Art Unit	1652
		Examiner Name	Peter P. Tung
		Attorney Docket Number	015389-002611US
Sheet	6	of	12

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Calvio <i>et al.</i> , "Identification of hnRNP P2 as TLS/FUS using electrospray mass spectrometry," (1995) <i>RNA</i> , 1:724	
		Caruthers <i>et al.</i> , "New chemical methods for synthesizing polynucleotides," (1980) <i>Nucleic Acids Res. Symp. Ser.</i> , 215-223	
		Chan and Tye, "Organization of DNA sequences and replication origins at yeast telomeres," (1983) <i>Cell</i> , 33:563	
		Colbere-Garapin <i>et al.</i> , "A new dominant hybrid selective marker for higher eukaryotic cells," (1981) <i>J. Mol. Biol.</i> , 150:1	
		Cole <i>et al.</i> , "The EBV-hybridoma technique and its application to human lung cancer," <i>Monoclonal Antibodies and Cancer Therapy</i> , Alan R. Liss Inc., New York NY 77-96 (1985)	
		Collins <i>et al.</i> , "Purification of Tetrahymena telomerase and cloning of genes encoding the two protein components of the enzyme," (1995) <i>Cell</i> , 81:677	
		Conrad <i>et al.</i> , "RAP1 protein interacts with yeast telomeres in vivo: Overproduction alters telomere structure and decreases chromosome stability," (1990) <i>Cell</i> , 63:739	
		Coombs, <i>Dictionary of Biotechnology</i> , (1994); pp. 101-102, 283, 301 and 332; Stockton Press, New York NY	
		Cote <i>et al.</i> , "Generation of human monoclonal antibodies reactive with cellular antigens," (1983) <i>Proc. Natl. Acad. Sci.</i> , 80:2026	
		Counter <i>et al.</i> , "The catalytic subunit of yeast telomerase," (1997) <i>Proc. Natl. Acad. Sci.</i> , 94:9202	
		Counter <i>et al.</i> , (1994) <i>Proc. Natl. Acad. Sci.</i> , 91:2900	
		Creighton; <i>Proteins, Structures and Molecular Principles</i> ; (1983); pp. 1-60; WH Freeman and Co; New York, NY	
		Dieffenbach and Dveksler, <i>PCR Primer, a Laboratory Manual</i> ; (1995) pp. 131-156, 453-462 and 507-580; Cold Spring Harbor Press, Plainview NY	
		Duplax <i>et al.</i> , "Quantitative analysis of polymerase chain reaction products using biotinylated dUTP incorporation," (1993) <i>Anal. Biochem.</i> , 212:229	

Examiner Signature		Date Considered	
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		Application Number	09/432,503
		Filing Date	November 2, 1999
		First Named Inventor	Cech, Thomas R., et. al.
		Art Unit	1652
		Examiner Name	Peter P. Tung
Sheet 7 of 12	Attorney Docket Number	015389-002611US	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Fang <i>et al.</i> , "Oxytricha telomere-binding protein: separable DNA-binding and dimerization domains of the α -subunit," <i>Genes Develop.</i> 7:870 (1993) and Gray <i>et al.</i> , (1991) <i>Cell</i> 67:807	
		Feng <i>et al.</i> , "The RNA Component of Human Telomerase," (1995) <i>Science</i> , 269:1236	
		GenBank Accession No. AA281296; April 2, 1997	
		Genbank accession no. AA299878; April 18, 1997	
		Genbank accession no. AA311750; April 19, 1997	
		Gilley <i>et al.</i> , "Altering specific telomerase RNA template residues affects active site function," (1995) <i>Genes Develop.</i> , 9:2214	
		Gottschling and Cech, "Chromatin Structure of the Molecular Ends of Oxytricha Mononuclear DNA: Phased Nucleosomes and a Telomeric Complex," (1984) <i>Cell</i> , 38:501	
		Gottschling and Zakian, "Telomere proteins: specific recognition and protection of the natural termini of Oxytricha macronuclear DNA," (1986) <i>Cell</i> 47:195	
		Grant <i>et al.</i> , <i>Meth Enzymol.</i> , (1987) 153:516-544.	
		Greenwood <i>et al.</i> , "Phylogenetic relationships within the class oligohymenophorea, phylum ciliophora, inferred from the complete small subunit rRNA gene sequences of <i>Colpidium campylum</i> , <i>Glaucoma chattoni</i> , and <i>Opisthionecta henneguyi</i> ," (1991) <i>J. Mol. Evol.</i> , 3:163	
		Greider and Blackburn, "A telomeric sequence in the RNA of Tetrahymena telomerase required for telomere repeat synthesis," (1989) <i>Nature</i> , 337:331	
		Greider and Blackburn, "Identification of a specific telomere terminal transferase activity in Tetrahymena extracts," (1985) <i>Cell</i> , 43:405	
		Greider, "Telomerase is processive," (1991) <i>Mol. Cell. Biol.</i> , 11:4572	
		Greider, "Telomere Length Regulation," (1996) <i>Ann. Rev. Biochem.</i> , 65:337	

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		Filing Date	November 2, 1999
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Sheet	8	of	12

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		Hampton <i>et al.</i> ; <i>Serological Methods a Laboratory Manual</i> ; (1990); pp. 33-86, 179-286; APS Press, St Paul MN	
		Harrington <i>et al.</i> , "A Mammalian Telomerase-Associated Protein," (1997) <i>Science</i> , 275:973	
		Harrington <i>et al.</i> , "Human telomerase contains evolutionarily conserved catalytic and structural subunits," (1997) <i>Genes Dev.</i> , 11:3109	
		Hartman and Mulligan, "Two dominant-acting selectable markers for gene transfer studies in mammalian cells," (1988) <i>Proc. Natl. Acad. Sci.</i> , 85:8047	
		Henderson and Blackburn, "An overhanging 3' terminus is a conserved feature of telomeres," (1989) <i>Mol. Cell. Biol.</i> , 9:345	
		Horn <i>et al.</i> , "Synthesis of oligonucleotides on cellulose. Part II: design and synthetic strategy to the synthesis of 22 oligodeoxynucleotides coding for gastric inhibitory polypeptide (GIP)," (1980) <i>Nucleic Acids Res. Symp. Ser.</i> , 225-232	
		Hudson <i>et al.</i> , "An STS-based map of the human genome," (1995) <i>Science</i> , 270:1945	
		Huse <i>et al.</i> , "Generation of a large combinatorial library of the immunoglobulin repertoire in phage lambda," (1989) <i>Science</i> , 246:1275	
		Johnson <i>et al.</i> , (1991) <i>Mol. Cell Biol.</i> 11:1	
		Kilian <i>et al.</i> , "Isolation of a candidate human telomerase catalytic subunit gene, which reveals complex splicing patterns in different cell types," (1997) <i>Hum. Mol. Genet.</i> , 6:2011	
		Kipling and Cooke, "Hypervariable ultra-long telomeres in mice," (1990) <i>Nature</i> 347:400	
		Klobutcher <i>et al.</i> , "All gene-sized DNA molecules in four species of hypotrichs have the same terminal sequence and an unusual 3' terminus," (1981) <i>Proc. Natl. Acad. Sci.</i> , 78:3015	
		Koehler and Milstein, "Continuous cultures of fused cells secreting antibody of predefined specificity," (1975) <i>Nature</i> 256:495	
		Kosbor <i>et al.</i> , "The production of monoclonal antibodies from human lymphocytes," (1983) <i>Immunol. Today</i> 4:72	

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Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/432,503
		Filing Date	November 2, 1999
		First Named Inventor	Cech, Thomas R., et. al.
		Art Unit	1652
		Examiner Name	Peter P. Tung
		Attorney Docket Number	015389-002611US
Sheet	9	of	12

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Lamond and Sproat; (1994) "Isolation and Characterization of Ribonucleoprotein Complexes;" In <i>RNA Processing: A Practical Approach</i> ; (Higgins, S.J. and Hawes, B.D. Eds.), Volume 1; pp103-140	
		Lamond et al., "Probing the structure and function of U2 snRNP with antisense oligonucleotides made of 2'-OMe RNA," (1989) <i>Cell</i> , 58:383	
		Lendvay et al., "Senescence mutants of <i>Saccharomyces cerevisiae</i> with a defect in telomere replication identify three additional EST genes," (1996) <i>Genetics</i> , 144	
		Lingler et al., "Purification of telomerase from <i>Euplotes adeiculus</i> : requirement of a primer 3' overhang," (1996) <i>Proc. Natl. Acad. Sci.</i> , 93:10712	
		Lingler et al., "Reverse transcriptase motifs in the catalytic subunit of telomerase," (1997) <i>Science</i> , 276:561	
		Lingner et al., "Telomerase RNAs of different ciliates have a common secondary structure and a permuted template," (1994) <i>Genes Develop.</i> , 8:1984	
		Lingner et al., "Telomerase and DNA End Replication: No Longer a Lagging Strand Problem?," (1995) <i>Science</i> 269:1533	
		Lowy et al., "Isolation of transforming DNA: Cloning the hamster apt gene," (1980) <i>Cell</i> , 22:817	
		Lustig and Petes, Identification of yeast mutants with altered telomere structure," (1986) <i>Proc. Natl. Acad. Sci.</i> , 83:1398	
		Maddox et al., "Elevated serum levels in human pregnancy of a molecule immunochemically similar to eosinophil granule major basic protein," (1983) <i>J. Exp. Med.</i> , 158:1211	
		Makarov et al., "Nucleosomal Organization of Telomere-Specific Chromatin in Rat," (1993) <i>Cell</i> , 73:775	
		McEachern and Blackburn, "runaway telomere elongation caused by telomerase RNA gene mutation," (1995) <i>Nature</i> , 376:403	
		Melby et al., "Quantitative measurement of human cytokine gene expression by polymerase chain reaction," (1993) <i>J. Immunol. Meth.</i> , 159:235	
		Merrifield, "Solid phase peptide synthesis. I. The synthesis of a tetrapeptide," (1963) <i>J. Am. Chem. Soc.</i> , 85:2149	

Examiner Signature		Date Considered	
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* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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		First Named Inventor	Cech, Thomas R., et. al.
		Art Unit	1652
		Examiner Name	Peter P. Tung
		Attorney Docket Number	015389-002611US
Sheet	10	of	12

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Meyerson <i>et al.</i> , "hEST2, the Putative Human Telomerase Catalytic Subunit Gene, Is Up-Regulated in Tumor Cells and during Immortalization," (1997) <i>Cell</i> , 90:785	
		Murray, <i>In McGraw Hill Yearbook of Science and Technology</i> , (1992) McGraw Hill, New York NY, pp 191-196	
		Nakamura <i>et al.</i> , "Telomerase Catalytic Subunit Homologs from Fission Yeast and Human," (1997) <i>Science</i> , 277:955	
		Nakayama <i>et al.</i> , "TLP1: A Gene Encoding a Protein Component of Mammalian Telomerase Is a Novel Member of WD Repeats Family," (1997) <i>Cell</i> , 88:875	
		Nielsen <i>et al.</i> , (1993) "Peptide nucleic acids (PNAs): Potential antisense and anti-gene agents," <i>Anticancer Drug Des.</i> , 8:53	
		Oka <i>et al.</i> , "Inverted terminal repeat sequence in the macronuclear DNA of <i>Stylonychia pustulata</i> ," (1980) <i>Gene</i> , 10:301	
		Olovnikov, "A theory of marginotomy: The incomplete copying of template margin in enzymic synthesis of polynucleotides and biological significance of the phenomenon," (1973) <i>J. Theor. Biol.</i> , 41:181	
		Orlandi <i>et al.</i> , "Cloning immunoglobulin variable domains for expression by the polymerase chain reaction," (1989) <i>Proc. Natl. Acad. Sci.</i> , 86:3833	
		Prescott, "The DNA of ciliated protozoa," (1994) <i>Microbiol. Rev.</i> , 58:233	
		Price, (1993) <i>Blood Rev.</i> , 7:127	
		Rhodes <i>et al.</i> , "Transformation of maize by electroporation of embryos," (1995) <i>Meth. Mol. Biol.</i> , 55:121	
		Roberge <i>et al.</i> , "A strategy for a convergent synthesis of N-linked glycopeptides on a solid support," (1995) <i>Science</i> , 269:202	
		Romero and Blackburn, "A conserved secondary structure for telomerase RNA," (1991) <i>Cell</i> , 67:343	
		Sambrook <i>et al.</i> ; <i>Molecular Cloning, A Laboratory Manual</i> ; (1989); pp. 8.1-8.86 and 16.1-17.44; Cold Spring Harbor Press, Plainview NY	

Examiner Signature		Date Considered	
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Receipt date: 07/25/2007

09432503 - GAU:1635

PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 11 of 12

Complete if Known

Application Number	09/432,503
Filing Date	November 2, 1999
First Named Inventor	Cech, Thomas R., et. al.
Art Unit	1652
Examiner Name	Peter P. Tung
Attorney Docket Number	015389-002611US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Sandell <i>et al.</i> , "Transcription of yeast telomere alleviates telomere position effect without affecting chromosome stability," (1994) <i>Proc. Natl. Acad. Sci.</i> , 91:12061	
		Sanger <i>et al.</i> , "DNA sequencing with chain-terminating inhibitors." (1977) <i>Proc. Natl. Acad. Sci.</i> , 74:5463	
		Scharf <i>et al.</i> , "Heat stress promoters and transcription factors," (1994) <i>Result Probl. Cell Differ.</i> 20:125	
		Shampay and Blackburn, "Generation of telomere-length heterogeneity in <i>Saccharomyces cerevisiae</i> ," (1988) <i>Proc. Natl. Acad. Sci.</i> , 85:534	
		Sheen and Levis, "Transposition of the LINE-like retrotransposon TART to <i>Drosophila</i> chromosome termini," (1994) <i>Proc. Natl. Acad. Sci.</i> , 91:12510	
		Singer and Gottschling, "TLC1: Template RNA Component of <i>Saccharomyces cerevisiae</i> Telomerase," (1994) <i>Science</i> 266:404	
		Starling <i>et al.</i> , "Extensive telomere repeat arrays in mouse are hypervariable," (1990) <i>Nucleic Acids Res.</i> , 18:6881	
		Swanton <i>et al.</i> , "Arrangement of Coding and Non-coding Sequences in the DNA Molecules Coding for rRNAs in <i>Oxytricha</i> sp.," (1980) <i>Chromosoma</i> 77:203	
		Tommerup <i>et al.</i> , "Unusual chromatin in human telomeres," (1994) <i>Mol. Cell. Biol.</i> , 14:5777	
		Trask, "Fluorescence in situ hybridization: application in cytogenetics and gene mapping," (1991) <i>Trends Genet.</i> , 7:149	
		Verma <i>et al.</i> , "Human Chromosomes: A Manual of Basic Techniques," (1988); pp. 4-30, 152-190; Pergamon Press, New York NY	
		Watson, "Origin of concatemeric T7 DNA," (1972) <i>Nature New Biol.</i> , 239:197	
		Weinrich <i>et al.</i> , "Reconstitution of human telomerase with the template RNA component hTR and the catalytic protein subunit hTRT," (1997) <i>Nat. Genet.</i> , 17(4):498-502	
		Wellinger <i>et al.</i> , "Origin activation and formation of single-strand TG ₁₋₃ tails occur sequentially in late S phase on a Yeast linear plasmid," (1993) <i>Mol. Cell. Biol.</i> , 13:4057	

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Signature

Date
Considered

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PTO/SB/08B (10-01)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known	
		Application Number	09/432,503
		Filing Date	November 2, 1999
		First Named Inventor	Cech, Thomas R., et. al.
		Art Unit	1652
		Examiner Name	Peter P. Tung
Sheet 12 of 12	Attorney Docket Number	015389-002611US	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Wellinger et al., "Saccharomyces Telomeres Acquire Single-Strand TG ₁₋₃ Tails Late in S Phase," (1993) <i>Cell</i> 72:51	
		Whitehead Institute/MIT Center for Genome Research, Genetic Map of the Mouse, Database Release 10, April 28, 1995	
		Wigler et al., "Transfer of purified herpes virus thymidine kinase gene to cultured mouse cells," (1977) <i>Cell</i> , 11:223	
		Wigler et al., "Transformation of mammalian cells with an amplifiable dominant-acting gene," (1980) <i>Proc. Natl. Acad. Sci.</i> , 77:3567	
		Winter and Milstein, "Man-made antibodies," (1991) <i>Nature</i> , 349:293	
		Wright et al., "Saccharomyces telomeres assume a non-nucleosomal chromatin structure," (1992) <i>Genes Develop.</i> , 6:197	
		Yu et al., "In vivo alteration of telomere sequences and senescence caused by mutated Tetrahymena telomerase RNAs," (1990) <i>Nature</i> , 344:126	
		Zahler and Prescott, "Telomere terminal transferase activity in the hypotrichous ciliate <i>Oxytricha nova</i> and a model for replication of the ends of linear DNA molecules," (1988) <i>Nucleic Acids Res.</i> , 16:6953	
		Zakian, Telomeres: Beginning to Understand the End," (1995) <i>Science</i> 270:1601	
		Zaug et al., "Catalysis of RNA Cleavage by a Ribozyme Derived from the Group I Intron of Anabaena Pre-tRNA ^{Leu} ," (1996); <i>Nucleic Acids Research</i> ; 24:532-533	

Examiner Signature		Date Considered	
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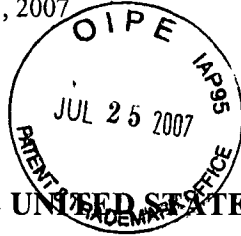
Date of Deposit: July 25, 2007

09432503 - GAU: 1635

PATENT

Attorney Docket No.: 015389-002611US

Client Reference No.: 018/063C



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Thomas Cech et al.

Application No.: 09/432,503

Filed: November 2, 1999

For: REDUCING TISSUE DAMAGE
DUE TO IMPAIRED REPLICATION
USING A VECTOR FOR EXPRESSING
TELOMERASE REVERSE
TRANSCRIPTASE

Confirmation No.: 1130

Examiner: Angell, Jon E.

Art Unit: 1635

**SUPPLEMENTAL INFORMATION
DISCLOSURE STATEMENT UNDER
37 CFR §1.97 and §1.98**

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In previously filed information disclosure statements, Applicants have identified certain related patents and pending non-provisional patent applications owned or co-owned by Geron Corporation with claims related to telomerase reverse transcriptase (e.g., claiming telomerase reverse transcriptase protein sequences, and/or telomerase reverse transcriptase nucleic acid protein encoding sequences, and/or telomerase reverse transcriptase promoter sequences, and/or cells or compositions comprising such protein or nucleic acid sequences, and/or the use of such proteins, nucleic acids, cell or compositions). For the convenience of the Office, in this supplemental IDS Applicants have provided an updated list (below) of related patents and applications including additional patents and applications. The tables below also show the status of pending applications and indicates where there have been one or more adverse decisions by the Office related to pending claims. Copies of the issued or most recently pending claims are

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included for the convenience of the examiner and are listed in the accompanying PTO/SB08B by reference number as shown in the table.

In connection with the claims pending in the instant application (related to a method of increasing the proliferative capacity of a mammalian cell expressing telomerase RNA component by introducing into the cell *in vitro* a recombinant polynucleotide that encodes a protein with telomerase catalytic activity) Applicants draw the attention of the Office to U.S. Pat. Nos. 7,195,911; 6,475,789; 6,261,836; 6,337,200; and 6,921,664; and allowed application No. 09/721,506. These patents and application include claims directed to cells comprising a polynucleotide encoding a protein with telomerase catalytic activity.

It is understood that the Office has access to the full patent specifications, file histories, and other information via PAIR. However, should the Office require copies of any documents the Office is urged to contact the undersigned. Moreover, although Applicants have provided this information in an attempt to assist the Office, it is Applicants' understanding that the Examiner will conduct his own analysis.

Applicants have provided this information in an attempt to assist the Office; however it is Applicants' understanding that the Examiner will conduct his/her analysis of the materials submitted herewith.

Summary

Patent No.	Title	Claims
Pat. No. 6,093,809	Telomerase	AU
Pat. No. 6,166,178	Telomerase Catalytic Subunit	AV
Pat. No. 6,261,836	Telomerase	AW
Pat. No. 6,309,867	Telomerase	AX
Pat. No. 6,444,650	Antisense Compositions For Detecting And Inhibiting Telomerase Reverse Transcriptase	AY
Pat. No. 6,475,789	Telomerized Mammalian Cells Human Telomerase Catalytic Subunit: Diagnostic and Therapeutic Methods	AZ
Pat. No. 6,617,110	Cells Immortalized with Telomerase Reverse Transcriptase for Use in Drug Screening	BA
Pat. No. 6,627,619	Antisense Compositions for Detecting and Inhibiting Telomerase Reverse Transcriptase	BB

Patent No.	Title	Claims
Pat. No. 6,808,880	Method for Detecting Polynucleotided Encoding Telomerase	BC
Pat. No. 6,921,664	Telomerase	BD
Pat. No. 6,927,285	Genes for Human Telomerase Reverse Transcriptase and Telomerase Variants	BE
Pat. No. 7,005,262	Methods for Detecting Nucleic Acids Encoding Human Telomerase Reverse Transcriptase	BF
Pat. No. 7,056,513	Telomerase	BG
Pat. No. 7,195,911	Mammalian Cells that have Increased Proliferative Capacity	BH
Pat. No. 7,091,021	Inactive Variants of the Human Telomerase Catalytic Subunit	BI
Pat. No. 6,337,200	Human Telomerase Catalytic Subunit Variants	BJ
Pat. No. 6,610,839	Promoter For Telomerase Reverse Transcriptase	BK
Pat. No. 6,767,719	Mouse Telomerase Reverse Transcriptase	BL
Pat. No. 6,777,203	Telomerase Promoter Driving Expression of Therapeutic Gene Sequences	BM
Pat. No. 6,440,735	Dendritic Cell Vaccine Containing Telomerase Reverse Transcriptase for the Treatment of Cancer	BN

App. No.	Title	Status	Pending Claims
09/432,503 (This application)	Reducing Tissue Damage Due to Impaired Replication Using a Vector for Expressing Telomerase Reverse Transcriptase	In most recent O.A., previous claims were rejected under 35 USC § 112 ¶ 1 (enablement).	BO
09/721,477	Immunogenic Nucleic Acid Sequences of Human Telomerase Reverse Transcriptase	In most recent O.A., previous claims were rejected under 35 USC § 112 ¶ 1 (new matter, written description and enablement requirements); §§ 102 and 103 (citing GeneBank Accession No. AA281296).	BP
09/721,506	Nucleic Acids Encoding Human Telomerase Reverse Transcriptase and Related Homologs	Allowed	BQ
10/877,124	Vector Encoding Inactivated Telomerase for Treating Cancer	No examination on the merits	BR
10/877,146	Vaccine Containing the Catalytic Subunit of Telomerase for Treating Cancer	No examination on the merits - Now Abandoned	BS

App. No.	Title	Status	Pending Claims
10/877,022	Treating Cancer Using a Telomerase Vaccine (Immunodetection of hTERT proteins)	In most recent O.A., claims are rejected under 35 USC § 112 ¶ 1 (written description and enablement requirements); and 35 USC § 112 ¶ 2	BT
11/207,078	Sequence of Telomerase Reverse Transcriptase, and Products Derived Therefrom for Conducting Clinical Assays, Immortalizing Cells, Screening Drugs, Treating Cancer, and for Other Commercial Purposes	No examination on the merits	BU
10/044,692	Nucleic Acid Vaccine for Eliciting an Immune Response Against Telomerase Reverse Transcriptase	In most recent O.A., previous claims were rejected under 35 USC § 112 ¶ 1 (written description and enablement requirements); and for obviousness-type double patenting over Pat. Nos. 6,093,809 and 6,261,836.	BV
08/974,584	Functional Homologs of Human Telomerase Reverse Transcriptase Containing the Telomerase T Motif	Obviousness-type double patenting rejections citing Pat. Nos. 6,261,836; 6,927,285; 6,921,664; 6,337,200; 6,475,789; 7,195,911 and Application Nos. 09/721,477; 10/877,124; 09/721,506; 11/207,078 and 10/044,692.	BW
10/053,758	Antibody to Telomerase Reverse Transcriptase	Allowed	BX
10/637,443	Identifying and Testing Antisense Oligonucleotides that Inhibit Telomerase Reverse Transcriptase	Rejection under 35 USC § 112 ¶ 1 written description and enablement requirements; and 112 ¶ 2	BY
10/862,698	Protein and Peptide Fragments from Mouse Telomerase Reverse Transcriptase	Abandoned in favor of continuation. Prior claims were rejected under 35 USC § 112 ¶ 1 written description and enablement requirements; § 102; and § 103	BZ
09/615,039	Oncolytic Virus that Replicates in Cells Expressing Telomerase Reverse Transcriptase	Abandoned Rejection under 35 USC § 112 ¶ 1 written description and enablement requirements; § 112 ¶ 2; § 102, § 103; and obviousness-type double patenting	CA
11/411,604	Telomerase Promoter Sequences for Screening Telomerase Modulators (Con of 09/615,039)	No substantive examination on the merits	CB
10/208,243	Method for Identifying and Killing Cancer Cells (Con of Pat. No. 6,440,735)	Non-final rejection under 35 USC § 112 ¶ 1 written description and 35 USC § 112 ¶ 1	CC
11/413,838	Cellular Telomerase Vaccine and Its Use for Treating Cancer (Div of 10/208,243)	No examination on the merits	CD

App. No.	Title	Status	Pending Claims
10/674,836	Cancer Therapy Using the Telomerase Promoter	Rejection under 35 USC § 112 ¶ 1 written description and enablement; double patenting over 6,777,203 35 USC § 112 ¶ 1	CE

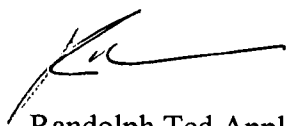
References cited on the attached PTO/SB/08A and PTO/SB/08B forms

The references cited on the attached PTO/SB/08A and PTO/SB/08B forms are being called to the attention of the Examiner. Copies of the references [in compliance with the requirements of 37 CFR §1.98(a)(2)] are enclosed. It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information, and no inference should be made that the information and references cited are, or are considered to be material to patentability because they are in this statement. No inference should be made that the information and references cited are prior art merely because they are in this statement.

Applicant believes that no fee is required for submission of this statement. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,



Randolph Ted Apple
Reg. No. 36,429

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
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PTO/SB/08A (04-07)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known

Application Number	09/432,503
Filing Date	November 2, 1999
First Named Inventor	Cech
Art Unit	1635
Examiner Name	Angell, J. E.
Attorney Docket Number	015389-002611US

Sheet	1	of	5
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U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
	AA	US-7,195,911 B2	03-27-2007	Cech et al.	
	AB	US-7,091,021 B2	08-15-2006	Morin	
	AC	US-7,056,513 B2	06-06-2006	Cech et al.	
	AD	US-7,005,262 B2	02-28-2006	Cech et al.	
	AE	US-6,927,285 B2	08-09-2005	Cech et al.	
	AF	US-6,921,664 B2	07-26-2005	Cech et al.	
	AG	US-6,808,880 B2	10-26-2004	Cech et al.	
	AH	US-6,777,203 B1	08-17-2004	Morin et al.	
	AI	US-6,767,719 B1	07-27-2004	Morin et al.	
	AJ	US-6,627,619 B1	09-30-2003	Cech et al.	
	AK	US-6,617,110 B1	09-09-2003	Cech et al.	
	AL	US-6,610,839 B1	08-26-2003	Morin et al.	
	AM	US-6,475,789 B1	11-05-2002	Cech et al.	
	AN	US-6,444,650 B1	09-03-2002	Cech et al.	
	AO	US-6,440,735 B1	08-27-2002	Gaeta	
	AP	US-6,337,200 B1	01-08-2002	Morin	
	AQ	US-6,309,867	10-30-2001	Cech et al.	
	AR	US-6,261,836	07-17-2001	Cech et al.	
	AS	US-6,166,178	12-26-2000	Cech et al.	
	AT	US-6,093,809	07-25-2000	Cech et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

61104622 ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /JEA/

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
				Application Number	09/432,503
				Filing Date	November 2, 1999
				First Named Inventor	Cech
				Art Unit	1635
				Examiner Name	Angell, J. E.
Sheet	2	of	5	Attorney Docket Number	015389-002611US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	AU	Claims for U.S. Patent No. 6,093,809.	<input type="checkbox"/>
	AV	Claims for U.S. Patent No. 6,166,178.	<input type="checkbox"/>
	AW	Claims for U.S. Patent No. 6,261,836.	<input type="checkbox"/>
	AX	Claims for U.S. Patent No. 6,309,867.	<input type="checkbox"/>
	AY	Claims for U.S. Patent No. 6,444,650.	<input type="checkbox"/>
	AZ	Claims for U.S. Patent No. 6,475,789.	<input type="checkbox"/>
	BA	Claims for U.S. Patent No. 6,617,110.	<input type="checkbox"/>
	BB	Claims for U.S. Patent No. 6,627,619.	<input type="checkbox"/>
	BC	Claims for U.S. Patent No. 6,808,880.	<input type="checkbox"/>
	BD	Claims for U.S. Patent No. 6,921,664.	<input type="checkbox"/>
	BE	Claims for U.S. Patent No. 6,927,285.	<input type="checkbox"/>
Examiner Signature			Date Considered

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¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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				Application Number	09/432,503
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				First Named Inventor	Cech
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Sheet	3	of	5	Attorney Docket Number	015389-002611US

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	BF	Claims for U.S. Patent No. 7,005,262.	<input type="checkbox"/>
	BG	Claims for U.S. Patent No. 7,056,513.	<input type="checkbox"/>
	BH	Claims for U.S. Patent No. 7,195,911.	<input type="checkbox"/>
	BI	Claims for U.S. Patent No. 7,091,021.	<input type="checkbox"/>
	BJ	Claims for U.S. Patent No. 6,337,200.	<input type="checkbox"/>
	BK	Claims for U.S. Patent No. 6,610,839.	<input type="checkbox"/>
	BL	Claims for U.S. Patent No. 6,767,719.	<input type="checkbox"/>
	BM	Claims for U.S. Patent No. 6,777,203.	<input type="checkbox"/>
	BN	Claims for U.S. Patent No. 6,440,735.	<input type="checkbox"/>
	BO	Pending claims for US patent application 09/432,503.	<input type="checkbox"/>
	BP	Pending claims for US patent application 09/721,477.	<input type="checkbox"/>
Examiner Signature			Date Considered

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¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
				Application Number	09/432,503
				Filing Date	November 2, 1999
				First Named Inventor	Cech
				Art Unit	1635
				Examiner Name	Angell, J. E.
Sheet	4	of	5	Attorney Docket Number	015389-002611US

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Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	BQ	Pending claims for US patent application 09/721,506.	<input type="checkbox"/>
	BR	Pending claims for US patent application 10/877,124.	<input type="checkbox"/>
	BS	Pending claims for US patent application 10/877,146.	<input type="checkbox"/>
	BT	Pending claims for US patent application 10/877,022.	<input type="checkbox"/>
	BU	Pending claims for US patent application 11/207,078.	<input type="checkbox"/>
	BV	Pending claims for US patent application 10/044,692.	<input type="checkbox"/>
	BW	Pending claims for US patent application 08/974,584.	<input type="checkbox"/>
	BX	Pending claims for US patent application 10/053,758.	<input type="checkbox"/>
	BY	Pending claims for US patent application 10/637,443.	<input type="checkbox"/>
	BZ	Claims previously pending in US patent application 10/862,698 (abandoned)..	<input type="checkbox"/>
	CA	Claims previously pending in US patent application 09/615,039 (abandoned).	<input type="checkbox"/>
Examiner Signature			Date Considered

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Sheet	5	of	5	Attorney Docket Number	015389-002611US

NON PATENT LITERATURE DOCUMENTS			
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	CB	Pending claims for US patent application 11/411,604.	<input type="checkbox"/>
	CC	Pending claims for US patent application 10/208,243.	<input type="checkbox"/>
	CD	Pending claims for US patent application 11/413,838.	<input type="checkbox"/>
	CE	Pending claims for US patent application 10/674,836.	<input type="checkbox"/>

Examiner Signature	/Jon Eric Angell/	Date Considered	03/26/2009
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